Description

The XE2X7VB TVS diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics such as low clamping voltage, low leakage current and high surge capability. It is designed to protect sensitive electronic components which are connected to power lines, from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning.

The XE2X7VB is in a DFN0603-2L package and will protect one unidirectional line. It may be used to provide ESD protection up to ±30kV (Contact and air discharge) according to IEC61000-4-2 , and withstand peak current up to 6A for 8/20 us according to IEC61000-4-5.

Features

- Working voltage: 7V
- DFN0603-2L Package
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±30kV (air),
  ±30kV (contact)
  IEC 61000-4-5 (Surge) 6A (8/20us)
  IEC61000-4-4（EFT）40A（5/50ns）
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

Applications

- Power lines
- Personal digital assistants (PDA's)
- Microprocessors based equipment
- Notebooks, Desktops, and Servers
- Cell phone Handsets and Accessories
- Portable Electronics
- Peripherals

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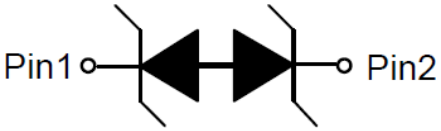
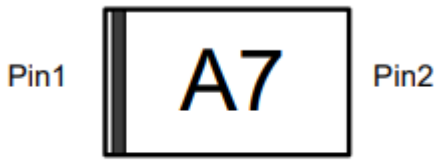
DFN0603-2L（Bottom View）



Circuit Diagram



A7= Device code

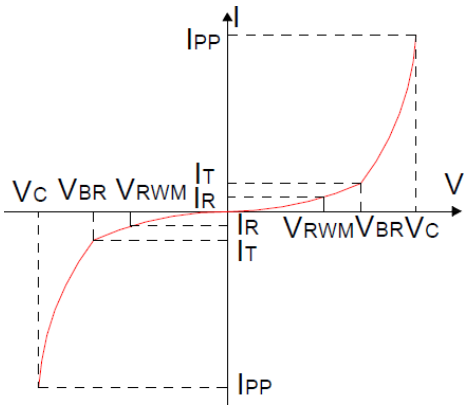
Marking（Top View）

Order Information

Device	Package	Shipping
XE2X7VB	DFN0603-2L	10000/Tape&Reel

Definitions of electrical characteristics

Symbol	Parameter
V_{RWM}	Reverse Stand-off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_R	Reverse Breakdown Current
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{PK}	84	W
Peak Pulse Currentr (t_P = 8/20μS)	I_{pp}	6	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	kV
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_{OP}	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

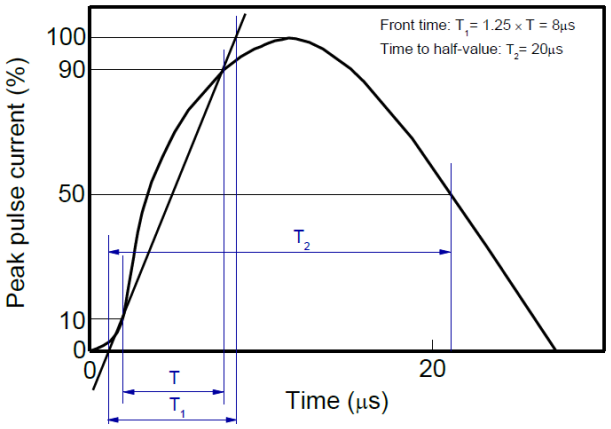
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				±7	V
Reverse Leakage Current	I_R	V_{RWM} =7V			100	nA
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	7.6	8	10	V
Clamping Voltage[1)]	V_{CL}	I_{PP}=1A t_P = 8/20μs		9	11	V
		I_{PP}=6A t_P = 8/20μs		12	14	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		15		pF

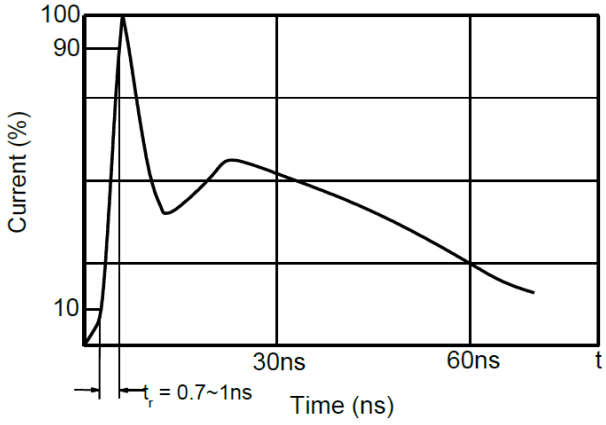
Notes:

1)Non-repetitive current pulse, according to IEC61000-4-5.

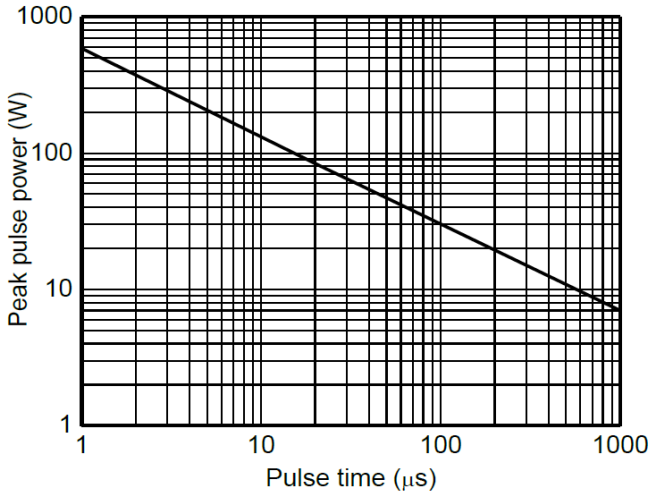
Typical Characteristics (Ta=25℃, unless otherwise noted)



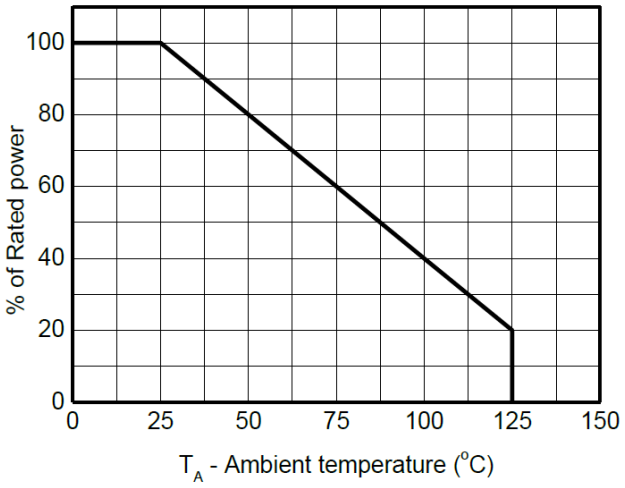
8/20μs waveform per IEC61000-4-5



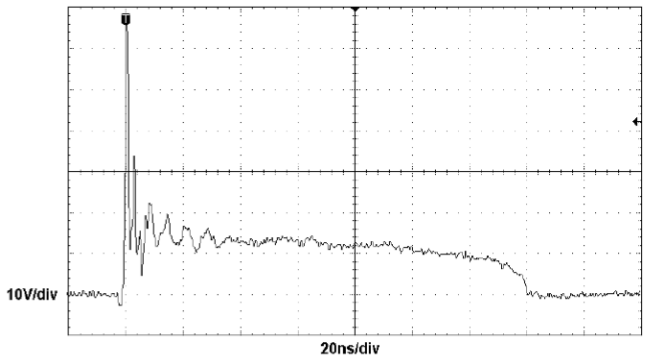
Contact discharge current waveform per IEC61000-4-2



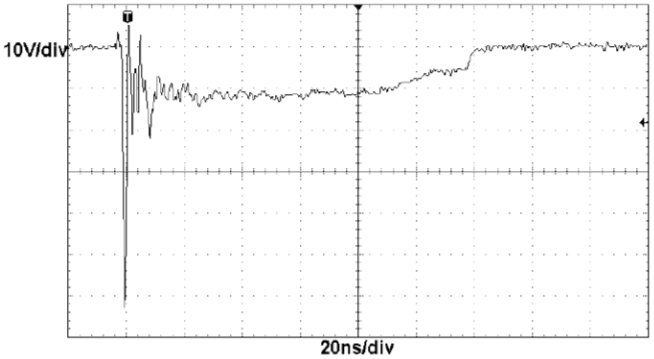
Non-repetitive peak pulse power vs. Pulse time



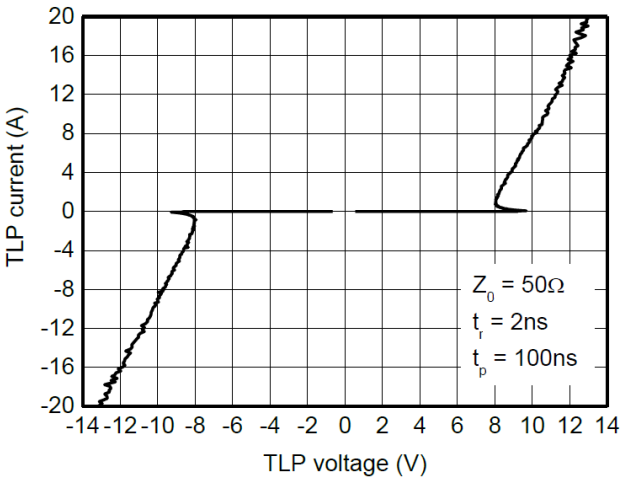
Power derating vs. Ambient temperature



ESD clamping
(+8kV contact discharge per IEC61000-4-2)

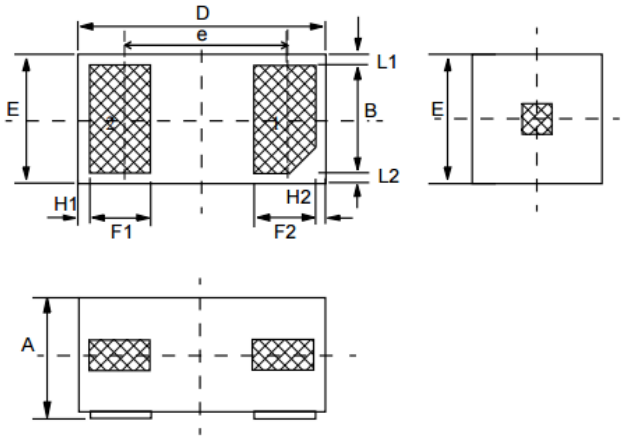


ESD clamping
(-8kV contact discharge per IEC61000-4-2)



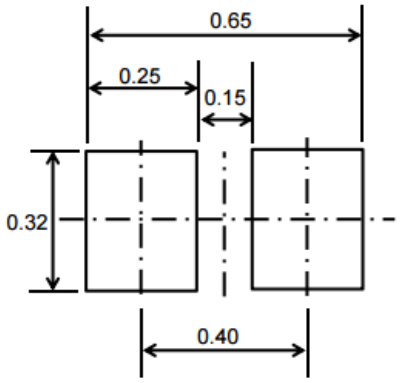
TLP Measurement

Package Outline Dimensions (DFN0603-2L）



Dim	Millimeters		
	MIN	Typ.	MAX
A	0.270	0.300	0.340
B	0.200	0.250	0.300
D	0.550	0.600	0.650
E	0.250	0.300	0.350
e	-	0.350	-
F1	0.130	0.180	0.230
F2	0.130	0.180	0.230
L1	0.015	0.030	0.045
L2	0.015	0.030	0.045
H1	0.030	0.045	0.060
H2	0.030	0.045	0.060

Recommend Land Pattern (Unit: mm)



Note:
This recommended land pattern is for reference purpose only.

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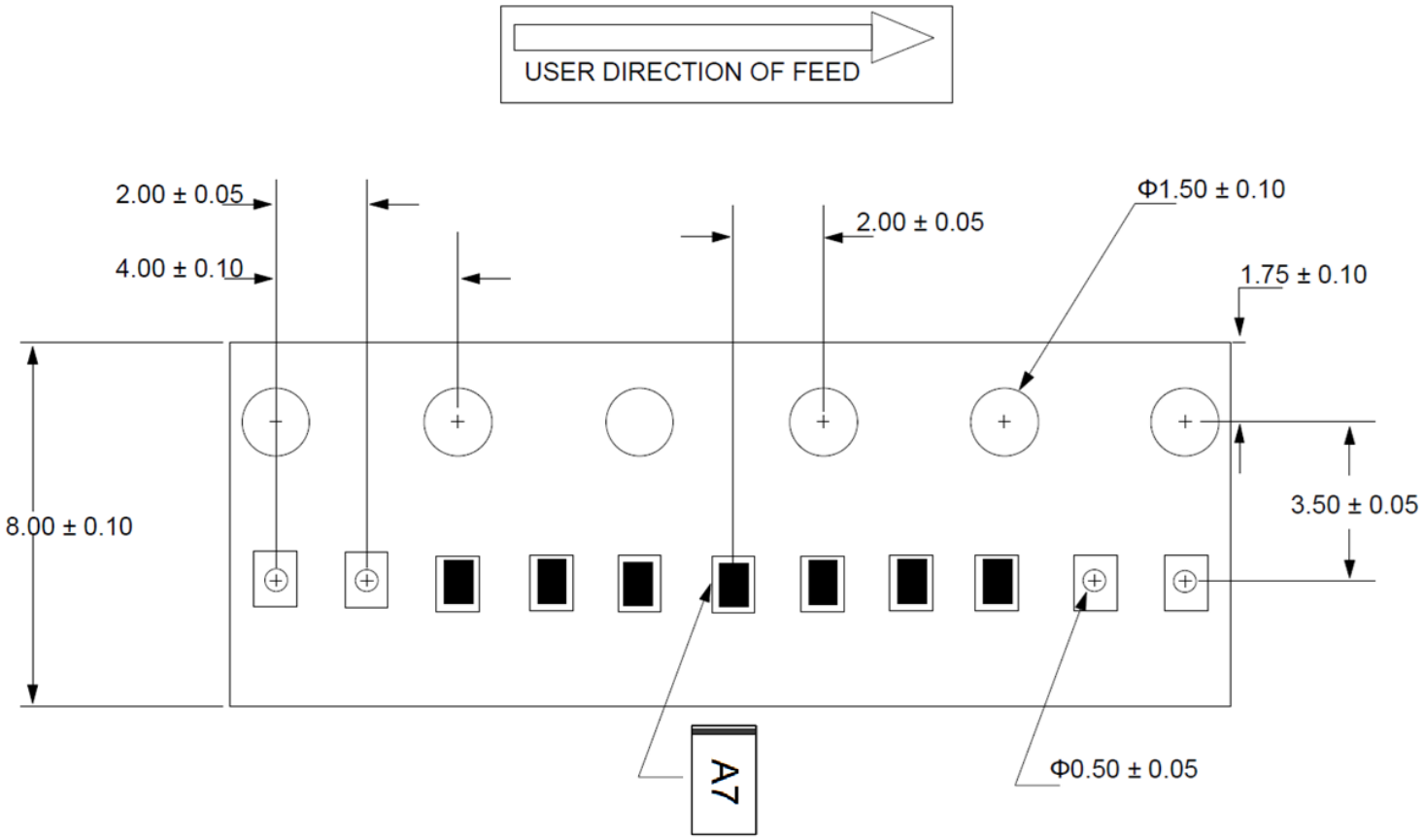

Unit：mm

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